R E P O R T R E S U M E S

ED 013 711 RE 000 266

A THREE-PRONGED ATTACK ON VOCABULARY DEVELOPMENT.

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PUB DATE MAY 67

EDRS PRICE MF-$0.25 HC-$0.64 16P.

DESCRIPTORS- *READING COMPREHENSION, *GUIDELINES, *TEACHING TECHNIQUES, *VOCABULARY DEVELOPMENT, *VOCABULARY SKILLS, TEACHING METHODS, WORD LISTS, STUDY SKILLS, CONCEPT FORMATION, QUEENS COLLEGE OF THE CITY UNIVERSITY OF NEW YORK,

STATUS STUDIES OF THE RELATIONSHIP BETWEEN VOCABULARY SIZE AND THE EXTENT OF READING SUPPORT THE BELIEF THAT MORE AVID READERS HAVE RICHER VOCABULARIES. HOWEVER, STUDIES OF DIRECT EFFORTS TO INCREASE VOCABULARY THROUGH WIDE READING ALONE HAVE NOT YIELDED SATISFACTORY RESULTS. HENCE, WIDE READING COMBINED WITH DIRECT AND INDIRECT APPROACHES IS RECOMMENDED FOR A COMPREHENSIVE PROGRAM IN VOCABULARY DEVELOPMENT. SUGGESTED GUIDELINES EMPHASIZE THE USE OF INDIVIDUAL WEAKNESSES IN DETERMINING THE DEGREE OF INVOLVEMENT IN VOCABULARY STUDY, THE STUDY OF WORDS IN CONTEXT, THE STUDY OF WORKING RATHER THAN ESOTERIC VOCABULARIES, AND THE APPLICATION OF WORD LEARNING. THE USE OF CONTEXTUAL AND STRUCTURAL CLUES, THE STUDY OF WORD ORIGINS AND MULTIPLE MEANINGS, THE STUDY OF WORD LISTS IN RELATION TO STUDENTS' ACTIVITIES, AND THE USE OF PROGRAMED MATERIALS ARE RECOMMENDED TO HELP STUDENTS BROADEN AND EXTEND THEIR VOCABULARIES. REFERENCES ARE INCLUDED. THIS PAPER WAS PRESENTED AT THE INTERNATIONAL READING ASSOCIATION CONFERENCE (SEATTLE, MAY 4-6, 1967). (NS)

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A Three-Pronged Attack on Vocabulary Development

"In all probability, an inadequate vocabulary is the greatest single cause for failure to read with comprehension in either general or technical fields."[1] This belief is commonly held by classroom teachers and reading authorities on the basis of their experiences with students and the results and implications of vocabulary research.

Each of us - whether we are teachers of English or science or social studies or teachers of reading - is concerned with our students' command over their language. And one aspect of this language is meaning vocabulary, that is, words which have meaning for those who hear, use or read them. We know that speaking and writing vocabularies - as measured by actual use - are exceeded in size by listening and reading vocabularies; but the size of our high school students' reading vocabulary is a matter of dispute, depending upon the way in which it has been measured. Estimates vary. Dale questions Seashore's figure of 80,000 words known by twelfth graders and suggests a

1. Luella Cole. The Elementary School Subjects. New York: Rinehart, 1946, 40.

number somewhat larger than Thorndike and Lorge's estimate of about 15,000. Regardless of the actual figure, an average is no indicator of what your students can manage. Besides, we are not as much interested in how many words students know as we are in their ability to cope with the reading demands school and society makes. These demands at the secondary level become increasingly greater as students sample larger varieties of narrative and expository materials containing words used in specialized ways. Serra[2] came to the conclusion that the "concept burden of instructional materials is too heavy" while other students of vocabulary reported a decrease in the rate of specialized vocabulary growth during the later high school years.

Word meaning involves percepts and concepts. While a delineation between the two is not sharp, students of language development define the former as "what is known of an object, a quality, or a relationship as a result of sensory experience."[3] Concepts grow out of percepts which lead to generalizations about objects, qualities or relationships. Before children arrive at school they learn percepts and develop concepts naturally, that is, by listening, speaking and exploring. First-hand experiences account for almost all they acquire. Their horizons broaden upon entrance into school: first-hand experiences continue but vicarious ones begin to shape their ideas more and more until a stage is reached wherein the latter dominate. That meaning vocabulary grows during these periods is established; that precision of

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2. Mary Serra. "The Concept Burden of Instructional Materials." Elementary School Journal, LIII (May 1953), 508-512.
3. David Russell. Children's Thinking. New York: Ginn and Co., 1956, 66.

meaning keeps pace with this growth is not as readily defined.

The work of Piaget and others suggest the close relationship between vocabulary and concept. Word meaning can be provided by definition and explanation - the use of words to explain words - but definition and explanation do not make up completely for deficiencies in concept weakness which could be the result of experiential deprivation. It becomes clear that our task as teachers of language includes attention to concept development, for without a referent to which vocabulary can be tied, meaning is unlikely. Of course we deal with several levels of meaning, and to expect all our students to reach these same levels in the face of variations in experiences and intelligence is hardly realistic. Some vague understandings of words might be realized without the acquisition of firm concepts. But the results are necessarily superficial and account for some of our frustration as we seek to help students better understand what they read.

It would appear, then, that one main attack to improve word understanding should be directed at developing some concept understanding. And this teachers of different subjects can do. For years now they have been urged to provide experiences - both direct and vicarious - that would better prepare their students to deal with the content they were expected to master. This building of background prior to reading can make a significant difference between merely reading words and truly establishing meanings.

Methods of Vocabulary Development

Research studies on vocabulary development have sought to test ways by which improvement might be realized. The results of these studies show that it is possible to increase meaning vocabulary through several avenues. However, it seems clear that dependence upon a single formula, regardless of its apparent values, is not as likely to bring results as multi-pronged attacks of a sustained nature. With regard to this last point: hit-and-run tactics such as devotion to vocabulary building for six-week or similar periods cannot be expected to produce lasting outcomes.

Wide reading in combination with direct and indirect programs constitute a three-pronged attack on vocabulary development. For reasons detailed earlier, we would not expect deep inroads into vocabulary weakness without accompanying efforts to expand concept formations. To rely upon a so-called "best" means reduces chances even more. Let us now examine each of these prongs as bases for a comprehensive vocabulary development program.

Wide Reading

The fact that children acquire meaning vocabularies in an easy and natural way prior to and during the early years of school - by listening to and experimenting with words - that words require a context and repeated settings and that some intensive vocabulary programs failed to produe expected results might have led to the suggestion by a number of reading and language students that wide reading is one of the best ways to develop vocabulary. Perhaps this conviction receives even greater support from the observation that avid readers appear to be masters of considerably more words than their less reader-oriented brothers. Status studies of the relation between

vocabulary size and extent of reading would be likely to support this belief even though causality could not be inferred from such investigations. However, studies of direct efforts to increase vocabulary through wide reading alone have not proved fruitful.

Furthermore, we can raise objections against the singular dependence upon reading to build vocabulary. We assume that if the reader meets a word for the first time or an old word in a new setting, that he will either determine its meaning from the context or the dictionary. Context is only useful if it is familiar; in addition, context can provide imprecise meanings which, when repeated, further reinforce them. To what extent students will halt their reading to look up unknown words in a dictionary is problematic. Some persons have suggested that to check dictionary meanings during reading interferes with one's thinking. The amount of reading each student does will vary; so will its quality. Uneven and unreliable results are predictable.

What then do we recommend? Wide reading by all means within a comprehensive vocabulary program and for other reasons too. Wide reading complements vocabulary activities of a direct or incidental kind. It increases our chances for providing meaningful learning through need and application.

Direct and Indirect Approaches

Students of vocabulary development have been divided on the question of the merits of direct teaching of vocabulary and incidental treatment of words. By direct teaching some mean the deliberate presentation of

of words taken from lists or other sources for study. Incidental treatment, they say, involves the study of words which appear in the textbooks and other sources students read. It seems to me that this differentiation is an artificial one. Who would question the desirability of helping students acquire initial and deeper meanings for words which appear in daily reading? Who would suggest that no gains are to be derived from efforts to broaden vocabulary if words are taken from other sources? The sources of words do not seem as crucial to vocabulary building as methods teachers pursue to help students increase their understanding of them. Personally I prefer meeting vocabulary needs as they occur. What better time and reason are there for dealing with them? But this preference does not preclude any attention one might give to so-called direct approaches to vocabulary building.

A number of investigations provide support for direct vocabulary instruction. But the research which provided little support for indirect instruction was not comparing the sources from which words were drawn; they compared direct instruction with casual or laissez-faire instruction. In the latter instance students were left to their own devices for dealing with unknown words. Who could not have predicted the results under these conditions? For purposes of this discussion, we view planned efforts, regardless of word source, as direct, and it is with these that we are concerned.

Demonstrations and investigations on vocabulary development do not point up overwhelming superiority of one method over another. They do appear to suggest underlying guidelines that we might follow regardless of method. They are:

1. all students are not required to deal with identical words since weaknesses should determine degree of involvement in vocabulary study.
2. words are studied in context rather than in isolation.

3. Emphasis is placed upon working rather than esoteric vocabulary.

4. Application of word learning is stressed.

Let's turn now to procedures for helping students broaden and extend their reading vocabularies. Each has some limitations but these do not preclude its use if we are aware of and take steps to deal with them.

We acquire vocabulary through verbal contexts; it seems reasonable to teach students to use these contexts as they read in order to seek meanings for unknown words. The key to word meanings in context are clues that might be joined to focus in on the unknown. If students require help in locating these clues and generalizing from them, you might provide a text for them in which several clues appear, discuss how these clues are related and then decide through choices what possible meaning for the unknown word the clues offer. The example given below contains a number of clues [in brackets] which students can use to determine the meaning of subsidence. Note how the larger context provides multiple clues not ordinarily found in single sentences.

12-9 Coral reefs appear in mid-ocean

Rocks and land formed by coral are some of the most interesting deposits in the sea (Figure 12-11). Study of cores taken by drilling holes through coral reefs down to 1400 meters tell us of the structure of these deposits. These cores were taken from Eniwetok Atoll. [Reef-building corals live only in tropical waters and at shallow depths (to 80 meters). Corals were found throughout the length of the core from Eniwetok.] The length of the core and the presence of coral indicated to earth scientists that conditions in the surface waters of the tropical seas had not changed for 60 million years.

How do we know this? How is it possible to find, at depths of 1400 meters, coral rock that was formed within 80 meters of the surface? To Charles Darwin, who visited coral atolls in the 1830's as a young man of 22, it seemed that the sea floor and the islands had slowly subsided. [The corals grew upward, keeping pace] with the subsidence (Figure 12-12). He recognized three types of

> coral reefs: reefs growing along the shores of volcanic islands; reefs that were some distance from a volcanic island with a lagoon behind the reff; and circular reefs, or atolls, which surrounded lagoons with no central island. Darwin believed that atolls had originally been shoreline reefs that were now at the last stages of subsidence.
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> A hundred years of argument followed the publication in 1842 of Darwin's ideas on atolls. [The borings on Eniwetok in the 1950's reached volcanic rock after passing through 1400 meters of coral.] Thus Darwin was proved correct and his idea was shown to be a great example of scientific reasoning. [More important, in proving him right, we have learned that the sea floor does not sink uniformly. Instead, it sinks an amount that depends on the mass of lava making up the individual island.][4] subsidence means: stopping, settling, raising.

After students have learned to interpret clues which we have called to their attention, we might provide other contexts in which similar clues appear but which students now seek to identify themselves. Some teachers have offered variations of these lessons with success: one is the presentation of possible meanings for the unknown word followed by a search for clues to support one of them; another is the removal from the text of the new word and from the clues a meaningful word found for it from a suggested group of words. We might expect variation in approaches to contribute to motivation and learning. A point to remember: discussing and exploring are likely to lead to better results than mere telling or performing.

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4. Investigating The Earth, Earth Science Curriculum Project, American Geological Institute, 1965, 12-12 -- 12-13.

Recently, the desirability of raising to conscious levels that which students seem to know has been suggested. Assuming such is the case, we might offer for study and discussion examples of structural and language clues which aid meanings through context: synonym and antonym, subordinate clauses, phrases in apposition, definition, illustration, position, typography.

We do not know to what extent the context offers meaning clues. Background of experiences can be a delimiting influence. And some texts might not contain clues or if present are so elusive that most students will not recognize them. And incomplete meanings might be products of contextual study. But few will deny some values in spending time with students who have not learned to take advantage of context mechanics and their interpretation.

Perhaps more attention has been given to the study of word origins as a vocabulary building technique by teachers and producers of materials then to any other method. It is reasoned that a large number of English words have their origins in Latin and Greek roots and affixes and that study of these sources will provide avenues through which meanings are secured.

All too frequently students are required to memorize the meanings of these prefixes, roots and suffixes and compile words containing them. This practice is dull and boring to most students and has not been shown to be a productive means of enabling them to determine the meanings of new words not previously encountered. Instead, some gains might be realized through a study of words as they appear in context in order to build relationships between the literal meaning as determined through analysis and actual meaning. Exercises in which the roots and affixes of these words are sought might be prepared (mission,

converts, intangible). In this connection, students should realize that a source might change in form and/or meaning. By providing a limited number of roots with their meanings as well as sentences and paragraphs we can build new words and substitute them for known words. In addition, by adding prefixes and suffixes to known words we can extend their meaning (form + al, hero + ic, ante + date). Meaningful application of word sources can develop insights which help some students unlock some words.

A related vocabulary development program involves the study of the history of words. Perhaps you recall the punishment Tantalus, son of Zeus, suffered in the lower world. Out of this Greek myth comes our word tantalize. It is possible that some students will be spurred on by such exposures. But to assume all students will, especially those who need help the most, is not realistic. Interesting and little-known facts about words can enliven the study of words, but they are not likely to be enduring motivators. Personal need has greater possibilities.

Breadth and depth of vocabulary becomes a major concern in the middle grades and continues thereafter. One aspect is tied to multiple meanings of words. As materials become more complex, words take on meanings not commonly associated with them. There has been some research to suggest that general vocabulary knowledge and knowledge of multiple meanings are not intimately related. Assistance in extending meanings can be provided in conjunction with dictionary use. Obviously, a curriculum in which provisions for varied activities exist will include reading of all types, and words that are familiar in one sense will appear in contexts that require others. The examination and study

of different meanings for such words - the word take, for example, is said to have 106 meanings - in order to determine an appropriate one could be a meaningful experience. Context clues, if present, in conjunction with dictionary choices will yield good results.

We need not only wait for words to appear in new contexts. We can provide contexts in which familiar words appearing in students' reading are used in different ways. Thus a word such as charge whose meaning is known in such contexts as charge five dollars or charged up the hill is presented in less familiar contexts: charged with murder, charge the jury, set off a charge. Total contexts plus meanings provided by the dictionary will suggest the sense in which the word is used. Additional experiences - oral, written and read - will tend to reinforce the new meanings students acquired for old friends.

The study of lists of words for which students are required to provide dictionary meanings and on which they are tested periodically has not proved to be a productive process when these words are studied in isolation and without purpose. Lists of words common to a particular area can be compiled by subject-matter teachers and studied by students in relation to their reading and writing. Graphic aids, models, descriptions and in some instances dramatizations can help to reduce verbalizations. Some educators have suggested exercises that require students to seek analogies among words, compare and categorize them in order to provide multiple exposures. How effective these approaches are will depend upon the extent to which they are meaningful, that is, tied to what students are doing. There is little

justification for expending time and energy on learning specialized uses of words if the words are not those which are relevant to topics being studied and on knowledge of which completion of tasks depend.

A more recent development in vocabulary development is the introduction of programed materials. These materials consist of items, called frames, which are placed in sequential order and are intended to elicit responses that are verified immediately. Usually on the basis of a given statement responses intended to develop understanding are made in order of difficulty:

These words contain prefixes: postpaid, postdate.

1. Which of the following words contain a prefix?

   swim, postwar 1. _____

2. The prefix in the word postmortem is

   2. _____

Additional frames built on preceding ones will develop the concept of the prefix as well as its specific meaning.

It is possible to create programed materials which stress relationships among words and their meanings. How effective their use is will depend on a number of factors such as student motivation and relevancy of content. It has been shown that some students seem to learn more through programed than other modes. Perhaps we need to experiment more with the process in order to ascertain the conditions needed to promote effective learning.

Summary

Vocabulary building is an integral part of the reading-learning process. Its importance to continuous growth in reading has led to a recognition of the contributions nature and nurture make to fulfillment. We teachers know that the sole responsibility for vocabulary development is not ours; however, we share this responsibility. Our task is to offer as meaningful and comprehensive a vocabulary development program as possible. We ought not to settle for less.

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